South Pacific Division

Southern California Earthquake Response Plan

Amy Aton
Readiness and Contingency Operations
South Pacific Division

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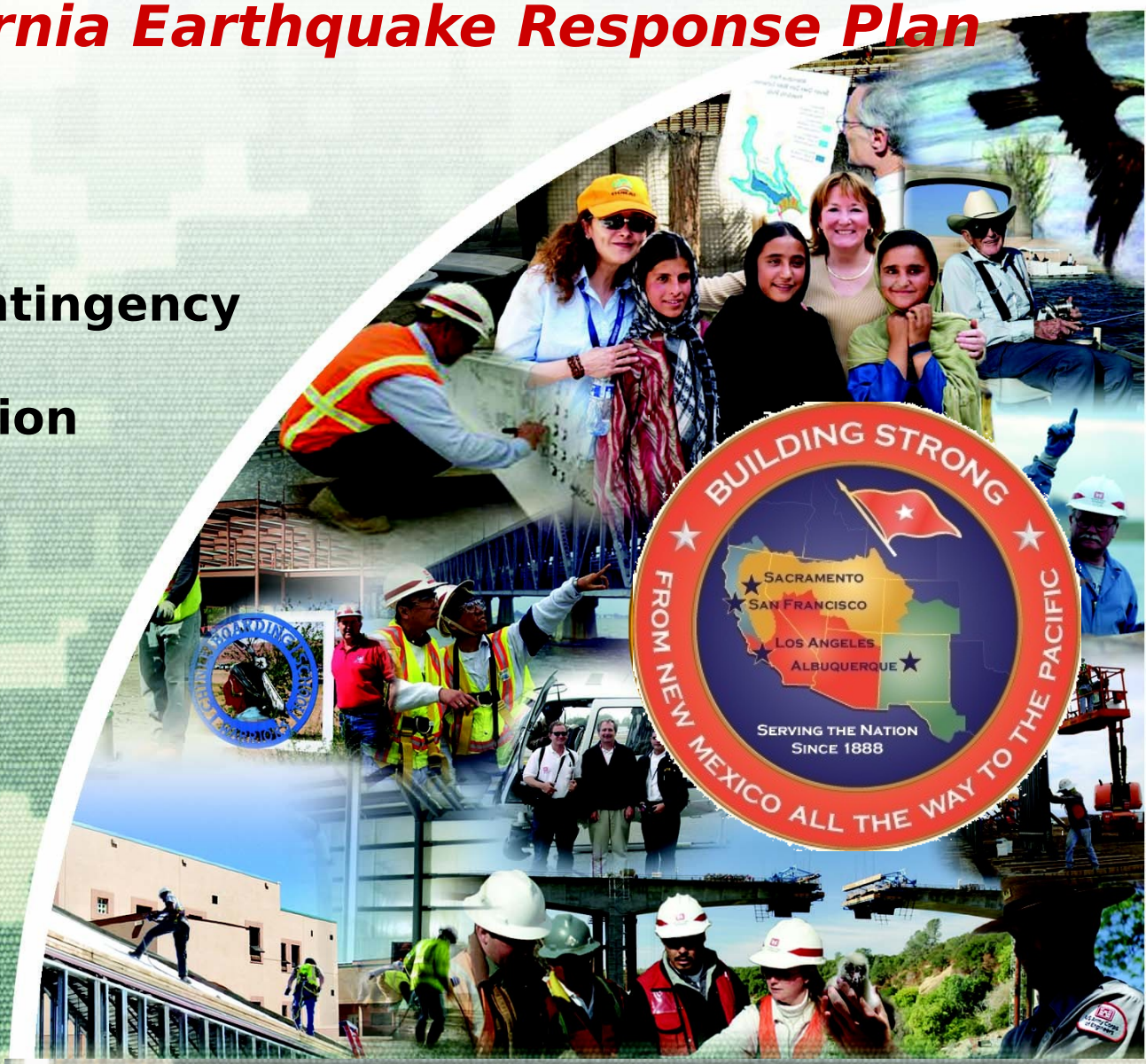

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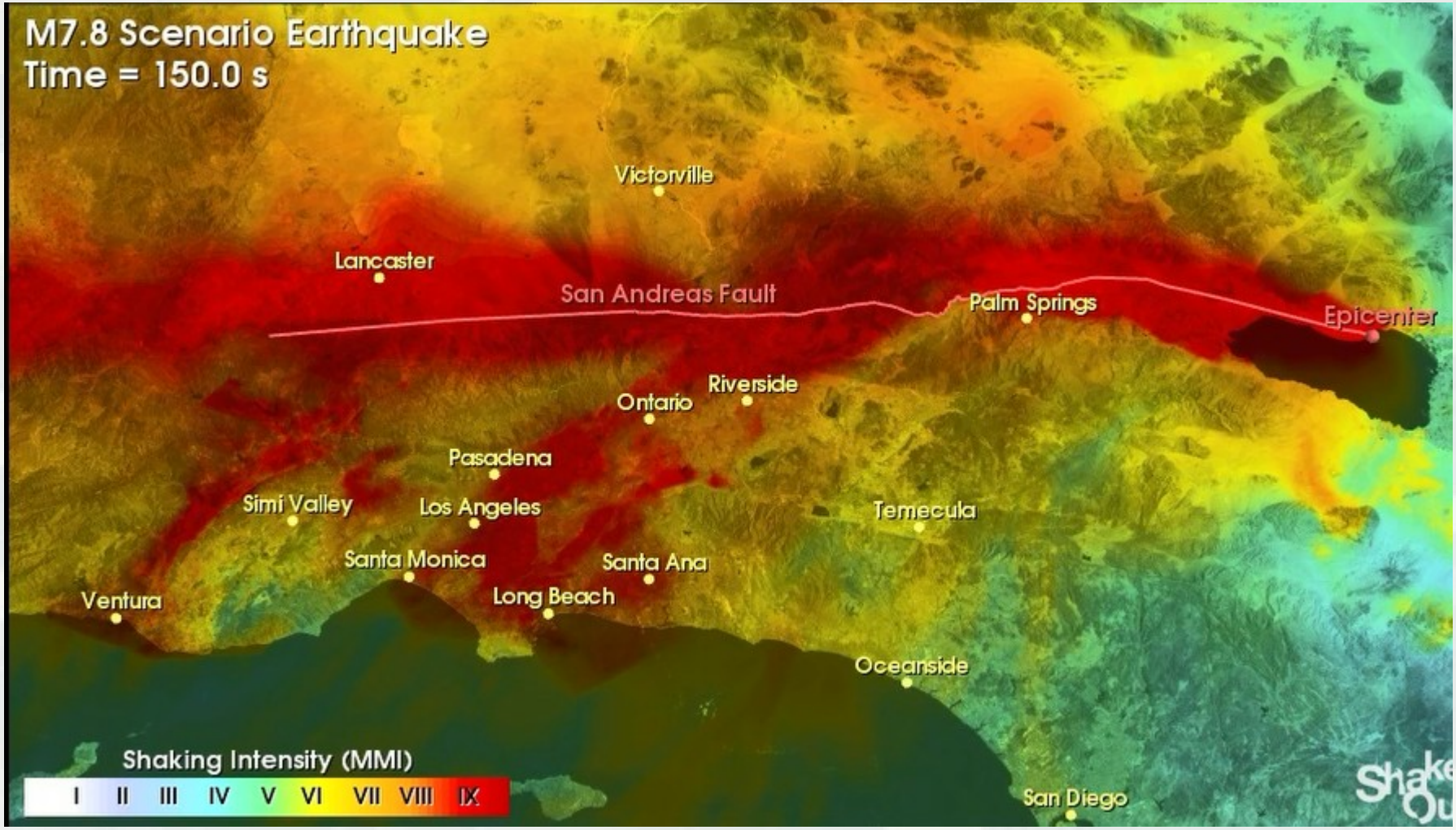
Southern California Catastrophic Earthquake Response Plan

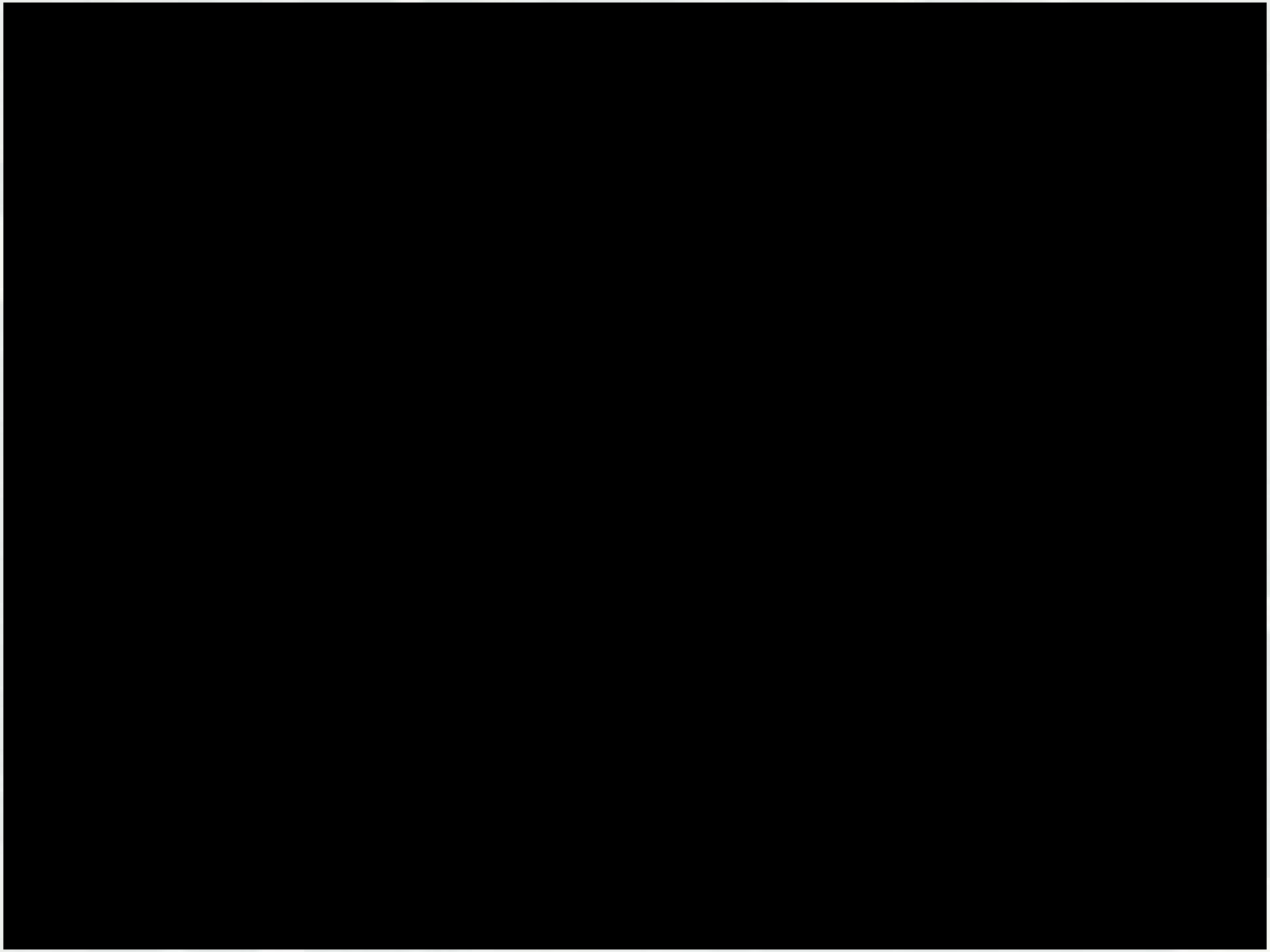
- Scenario
- Situation
- Assumption
- Impacts
- Activation

- Response Framework
- Critical Areas of Concer
- Bundled PSMA
- Mission Specifics

San Andreas Fault Eruption in So Cal



Ground Motion

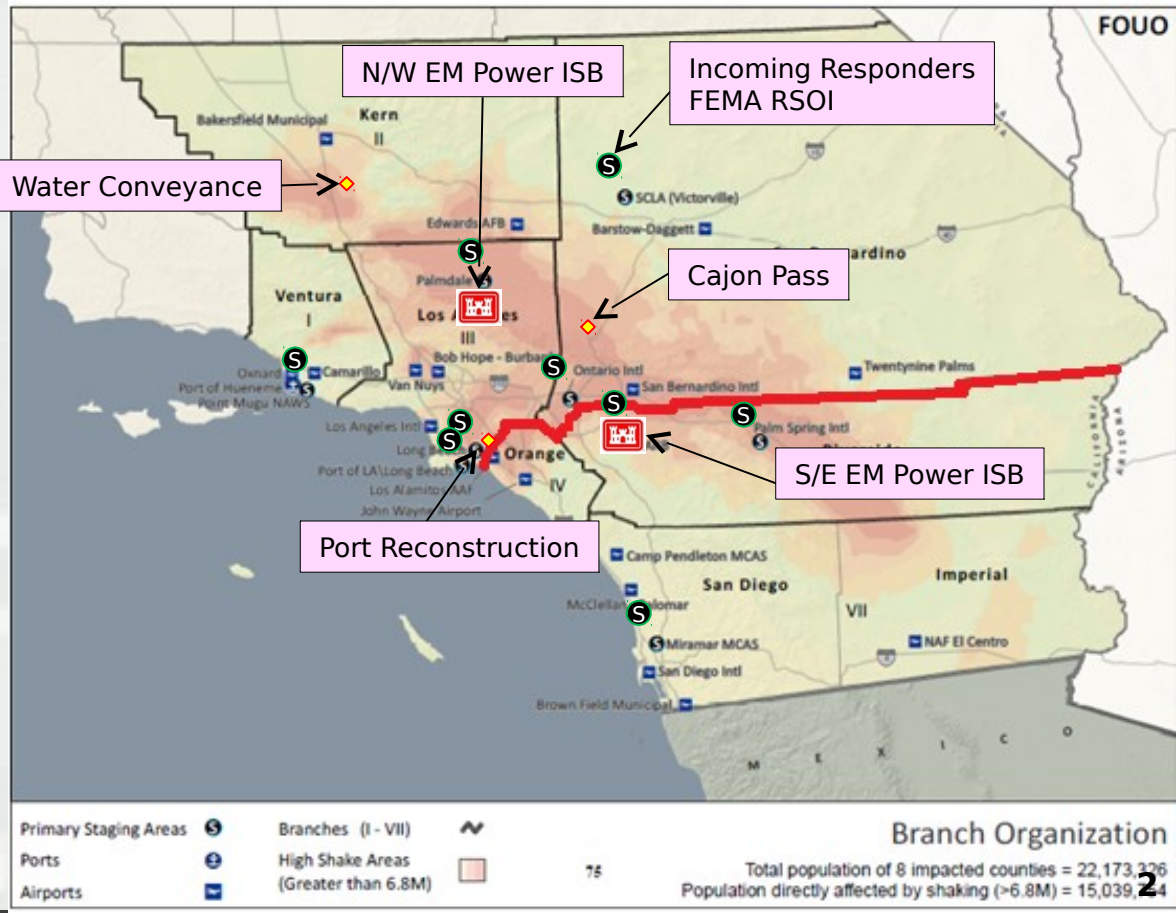


Situation

Magnitude 7.8 earthquake on the southernmost segment of the San Andreas Fault impacting 8 counties in Southern California: Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura

.**General Impacts**

- Displaces 542,000 people (10% toddlers/infants)
- Over 35,000 people requiring Urban Search and Rescue
- Requires 255,000 shelters
- 1,800 dead, 53,000 injured.
- Surface ruptures at I-10 and I-15 fault crossings
- Damage triggers evacuations at dams
- 300,000 buildings (many high-rises) significantly damaged
- 1,600 expected fires
- 3-30 inch natural gas lines will rupture
- Food and water for 2.5 million people sheltering in place
- Credible threat of collapse of pre-1994 steel frame high rises
- 81 Million tons of debris
- Landfills will be over capacity and other debris options are required
- Sewer pipelines and equipment at water/waste water treatment plants will be damaged
- 30 dams within ~15 miles of fault could experience damage
- Aqueduct and levee failures will flood



Assumptions

- The California Governor will request and President will grant an Emergency Declaration
- Southern California Earthquake will be a Level 1 Event due to National level impacts and severity of damage.
- NRCC (under Level 1 Response) will immediately execute the USACE Southern California Earthquake Bundled Mission Assignment ($129.3M)
- Los Angeles District will immediately execute their COOP
- Los Angeles District office at 915 Wilshire Blvd unusable, reconstitution of district at alternate location
- Sacramento District is task-assigned as lead supporting district, immediately executing response activities
- <unknown>% of Los Angeles District personnel are available to respond
- Victorville/Barstow is designated as primary staging area for incoming responders
- FEMA has activated 10 US&R Task Forces requiring the entire USACE Structures Specialist Cadre (50 Pax) for sustained response
- Responders must be self-sustaining for 72-96 hours
- USACE Responding personnel/RSOI processing expectation in first 10 days
    - 0-72 hours: 314 responders (identified by launch bundle)
    - 4-7 days: : 721 responders (identified by launch bundle)
    - 7-10 days : 900+ responders (identified by launch bundle)

DAMAGE IMPACTS with USACE Roles

USACE mission assignment (bundl
USACE TF/coordination
USACE Authorities

- A magnitude 7.8 earthquake on the southernmost segment of the San Andreas Fault will impact 8 counties in Southern California: Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura.
- 542,000 people will be displaced (10% will be toddlers and infants)
- 255,000 people will require shelters
- 53,000 le will be injured and will require medical services
- 1,800 people will be immediate lities and will require remains handling
- 267,000 household pets will be displaced
- 300,000 buildings (many high-rises) will be significantly damaged
- 1,600 fires are expected
- 2.5 million people will shelter in place and will require food and water
- One nuclear power site (San Clemente) will shut down
- Loss of co munication, water, electricity, and fuel and supporting infrastructure
- Three 30-inch natural gas lines will rupture
- Significant damage to communication, electrical, fuel and rail lines at Cajon Pass
- Utilities wi not be restored quickly and there will be long term recovery

- Airport capability in the region is significantly impacted
- Loss of Power, damage egress roads/rail and water debris will render Ports unusable
- Restoration of Ports are of National Importance
- Railroad lines at 21 locations along the San Andreas fault will be greatly affected
- The road network throughout the region is severely impacted

State of CA Coordinating Officer and Federal Coordinating Officers Incident Objectives Crosswalk with SPD Priorities

▪ Conduct Search and Rescue Operations	▪ Urban Search & Rescue Structures Specialist (Life Saving)
▪ Provide Safety, Security and Support to Emergency Response Operations	
▪ Reduce Hazards: Suppress Fire, Contain Hazardous Materials	▪ Accountability of SPD Personnel (Aftershocks)
▪ Provide Emergency Health and Medical Services	▪ Establish C2 & Common Operating Picture for vertical communication
▪ Provide Mass Care support to include: care and shelter and support of evacuation operations and evacuees	▪ Water and Bulk Water Acquisition & Delivery
	▪ Quickly establish EOC/RSOI to manage incoming assets
▪ Establish Lines of Supply for fuel/resources: Sea Ports, Airports, Railroads, and Roads	
▪ Conduct Mass Fatality Operations	▪ Debris Emergency Road Clearance
▪ Conduct Debris Clearance	▪ Emergency Power to Critical Public Facilities
▪ Stabilize and augment critical utilities	▪ Infrastructure Assessment & Water/Waste Water and Structural Technical Assistance
▪ Conduct Safety Assessments	
▪ Gain and Maintain Situational Awareness	

Activation / Deployment

0-24 Hrs

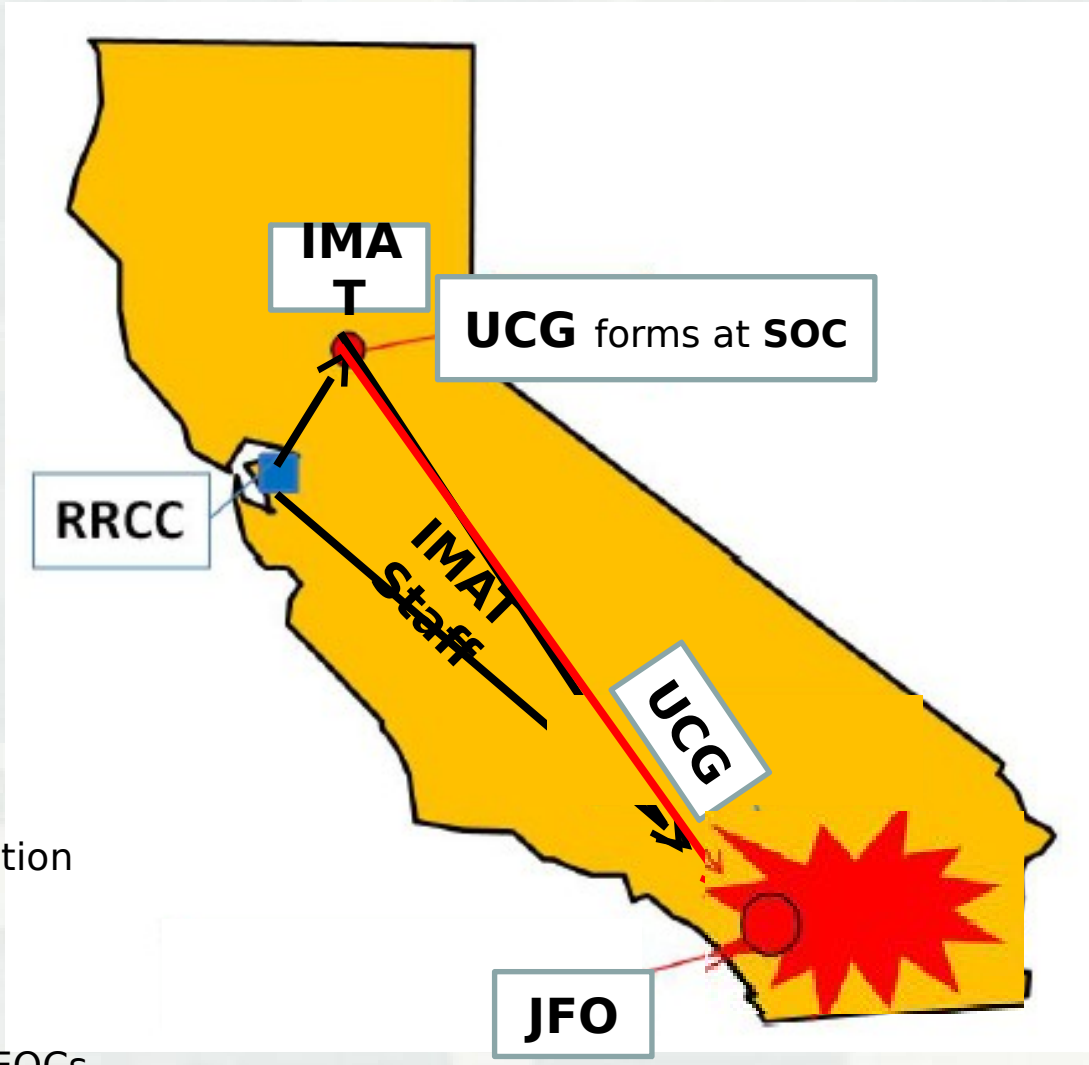
- SOC and RRCC Activates begins assessment of Situation and Coordinate Response Activities
- CalOES ROC and FEMA AFO Impacted by EQ

24-72 Hrs

- IMAT with OFAs Deploy to SOC
  - Regional Augmentation
  - Establish UCG
  - Transitions to incident area (72hrs)
- State/IMAT staff
  - Establishes IOF in incident area at S.REOC or FEMA AFO

72hrs – 5 days

- SOC and RRCC Maintain Level II Activation
  - Maintain Situational Awareness
  - Maintain Operational Awareness
- State/IMAT w/ OFA
  - Deploy to Operational Areas (AO) EOCs and establish Branches and Division
  - JFO established to support 5000 responders



Response Framework

- The earthquake will impact eight (8) counties in Southern California**: Imperial County, Kern County**, Los Angeles County, Orange County, Riverside County, San Bernardino County**, San Diego County and Ventura County.**

- **Los Angeles, Orange, Riverside, and San Bernardino** Counties will be hardest hit. Branch Field Offices and corresponding USACE Emergency Field Offices (EFO) are part of the bundle PSMA

- **LGLs assigned to Branch Field Office**
- **TL/ATL assigned to Branch Field Office**

Forward Element Response

- **JFO**
- **Branches**
  - **III - Los Angeles**
  - **V – San Bernardino**
  - **IV – Orange**
  - **VI - Riverside**

Critical Concerns

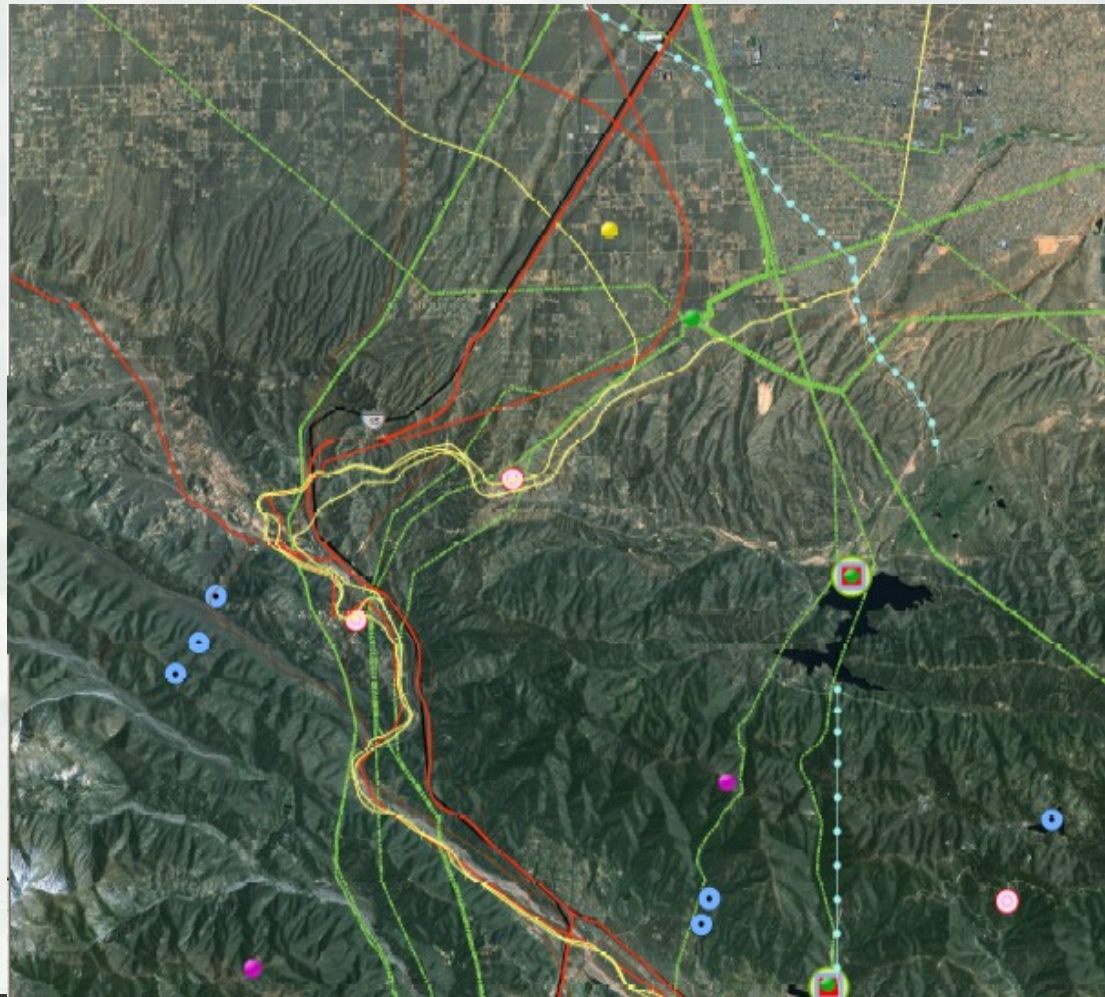
- Triage of critical infrastructure systems to enable communications, water distribution, power generation, fuel refinement, and air operations is prioritized by the UCG as temporary sources of water, power, and fuel.
- Key to the successful execution of the mission above is the activation of three important Task Forces:

- **Cajon Pass Task Force**
- **Port Reconstruction Task Force**
- **Water Conveyance Task Force**

Cajon Pass Task Force (TF)

- Lead: California Utilities Association and **ESF 3**
- Mission: Coordinate and facilitate the rapid and efficient repair of private sector critical infrastructure. (Power, Communications, Natural Gas and other Fuels, and Railroads) that passes through the Cajon Pass and other critical locations damaged by the earthquake

End State: Restoration of basic services (Power, communications, Natural Gas and other Fuels, and Rail Service) to the affected population and surrounding areas.

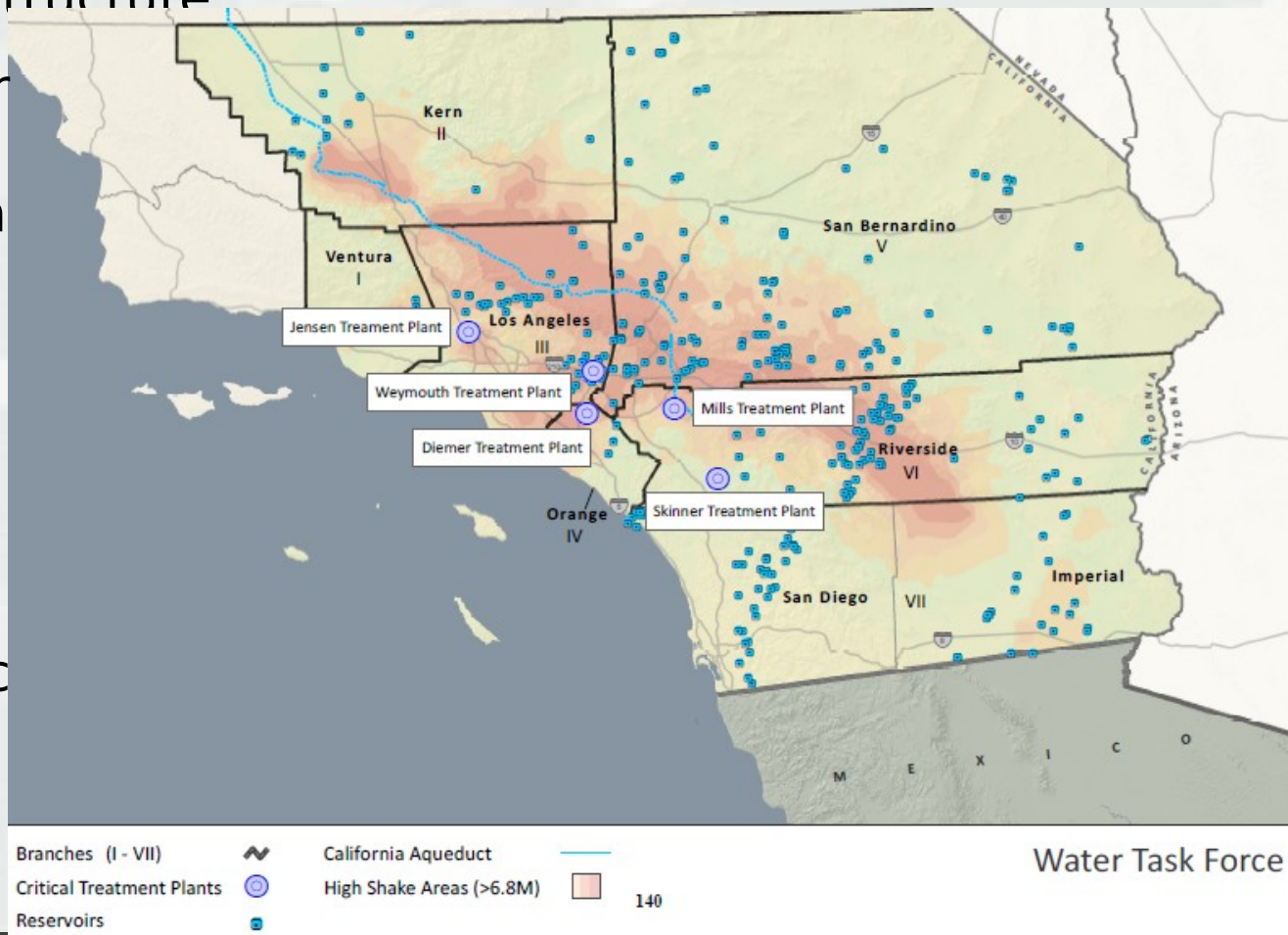


Water Conveyance Task Force

- Leads: Department of Water Resources and the Metropolitan Water District of Southern California.
- Mission: Coordinate and facilitate the rapid and efficient repair the critical water infrastructure

  that provides water resources to affected population in Southern California and surrounding areas.

- End State: Restoration of uninterrupted basic water services to the affected population and surrounding areas



Port Reconstruction Task Force

- Lead: United States Coast Guard
- Mission: Ensure functionality of the Ports of LB/LA following a catastrophic EQ in order to ensure short term and long term recovery for the LA Region and United States.
- End State: Restoration of normal port operations for LA/LB ports supporting both emergency response and commercial operations.

Port Reconstruction Task Force

- USACE supports critical utilities restoration wiring ships into the port grid
- USACE conducts ongoing assessments of the port electrical infrastructure to expedite the implementation of temporary emergency power
- USACE and ESF 12 reroute and step down bulk petroleum conveyance directly to loading racks from ships
- USACE provides specialized equipment ie salvage tugs & barges
- USACE: begin route clearance and bridge repair operations including key routes outwards from ports
- USACE support channel surveys if requested

Bundled PSMA for SoCal Earthquake

SOUTHERN CALIFORNIA (NRCC)	PAX	TYPE	DFA	FOS
NRCC National Activation	12	FOS		$255,000
Structures Specialists for US&R support	26	FOS		$1,200,000
Generator Leasing	4	FOS		$7,100,000
Bottled and Bulk Water	23	DFA	$71,000,000	
Total DFA/FOS			**$71,000,000**	**$8,555,000**
SOUTHERN CALIFORNIA (RRCC/JFO)		TYPE	DFA	FOS
Regional Activation (RRCC/JFO/RFO/AFO)	20	FOS		$4,200,000
Commodities Distribution	134	FOS		$6,000,000
Deployable Tactical Operations System	22	FOS		$1,200,000
Infrastructure Assessment	56	FOS		$3,000,000
Temporary Housing	4	FOS		$220,000
Logistics	5	FOS		$225,000
Remote Sensing / GIS	7	FOS		$310,000
Recovery Field Office Operations	0	FOS		$3,000,000
Local Government Liaison	18	FOS		$810,000
Temporary Emergency Power	418	DFA	$13,200,000	

Urban Search & Rescue

- 8 of 28 National Urban Search and Rescue task forces reside in SoCal
- Estimated 5-10 high rises will collapse, ~800 10+ story buildings are in the impact area. ~5000 rescues from collapsed structures may be necessary.
- Size Large US&R Structures Specialist Cadre (26 pax) deployed as part of the bundle (14 day deployment)
- Structures Specialist Cadre deploys to LAX
- Six-person Structures Specialists Advanced Strike Team reports to FEMA US&R IST
- Remaining Structures Specialist Cadre to supplement US&R Task Forces

Emergency Power

- Generator Leasing
  - 2 @ 54 packs and 20-25 high end gens for 30 days
- 2 Type 1 Emergency Power Teams supporting
  - Cajon Pass Task Force
  - Port Reconstructions Task Force
  - North-West ISB at Burbank Airport
  - South-East ISB at March Air Force Base

Temporary Housing

- Temporary Housing Task Force support
- Critical Public Facilities Mission
- Temporary Housing Site Design

National Water

- 200 trucks per day for 30 days ($61M)
- Bulk Water for 30 days ($10M)

Combined Commodities

- Deploy Type 1 Commodities Team
- Report and track ~50 Points of Distribution
- Assist FEMA with manning for commodities at ~ 3 Staging Areas
- 24 hour operations

Debris

- USACE will Conduct Debris Clearance and Disposal Mission
  - The catastrophic event will create approximately 81 million tons of debris in the impacted area.
  - Most of the 76 landfills are near capacity and debris removal efforts will require an additional amount of capacity that exceeds that which is available.
  - Lack of water for fire suppression will burn over 4500 acres which equates to 133,000 single-family dwellings and $65 billion dollars in property loss
- USACE will deploy debris removal Planning and Response Teams, (PRTs), heavy equipment and demolition services to help fire suppression at the request and in support of Cal EMA Fire and Rescue EOC or SOC.
- Support for animal carcass disposal

Debris Management

At $16/CY, the contract will run $120K/day. USACE personnel required to support the mission would total 40. (10 PRT members, 25 QA inspectors, and 5 supporting area engineers).

- Estimate $150K for contractor mobilization. Approximately 225,000 CY will be removed and disposed of in a 30-day period. Costs could vary significantly based on haul distance to disposal site.
- 10 crews (each crew consisting of four [4] trucks and one [1] front-end loader) removing and disposing of 750 cubic yards (CY) of debris/crew/day for 30 days

Debris Management			
Un-appropriated = Regular + OT 1 Person 12 hrs/day X7 days	**Per 12 Hour Shift**	**Daily Cost @ 40 per day**	**Total Cost (30 days)**
Regular Time (40 hrs X $59.89)	$480	$19,200	$576,000
Overtime (44 hrs X $59.89)	$377	$15,080	$452,400
Benefits @ 39% per CBO	$187	$7,488	$224,640
Lodging + M&IE	$300	$12,000	$360,000
Air fare	$115	$32,000	$32,000
Miscellaneous Expenses	$25	$1,000	$30,000
Rental Car @ $35/day	$35	$1,400	$42,000
Parking at @ $25/day	$25	$1,000	$30,000
Gas	$6	$240	$7,200
Daily Burn Rate (DBR) / shift	$1,550	$89,408	$1,754,240
Contract Mobilization			$150,000
Debris ACI (10 crews)			$3,000,000
Total			$4,904,240

Infrastructure Assessment

- Over 300,000 buildings are significantly damaged (1 in 16) and require inspection.
- USACE Infrastructure Assessment Teams conduct rapid structural and nonstructural assessments of potentially affected public infrastructure in branches and divisions. Assets are mission assigned under ESF 3.
- Infrastructure Assessment Management Cell coordinates & provides accountability for USACE personnel deployed under Technical Assistance and Urban Search and Rescue, Water/Waste Water mission assignments.

State

Drinking Water Safety & Water / Waste Water IA & Repair

- Deploy Water Sector Technical Assistance (WSTA) team members/SMEs
- Deploy personnel to coordinate and execute all necessary assessments, evaluation, and design/build response and recovery actions associated with ensuring the safety of drinking water and wastewater systems
- USACE support to Water Conveyance Task Force
- USACE support to Water/Waste Water system restoration
- USACE supports EPA / State due to San Bernardino and Riverside counties possibly releasing untreated sewage into the Santa Ana River due to damage to the system and lack of power supply, which would directly affect environmental conditions in the river as well as water supplies through contamination of groundwater spreading grounds over a long period of time.

Long Term Recovery Actions – ISF #5

- Stabilize and Provide Critical Utilities for Priority Infrastructure: Water/Wastewater, Power, Natural Gas
- Rebuild Schools, critical facilities
- Road/Highway infrastructure
- Lay new pipe rather than repair the existing infrastructure
- Ordered, manufactured, and constructed Transmission towers for full service on major 500 kV lines.
- The two nuclear sites in San Diego and San Luis Obispo counties will be shut down and cooled down regardless if damages occur or not. Nuclear facilities have a limited number of certified operators.
- Repair/replace damaged 30+ inch natural gas transmission lines that cross the fault in Los Angeles, Riverside and San Bernardino counties
- Transition sheltering from temporary housing to rebuilt or repaired homes or other temporary housing.
- Restore full commercial capability to the Ports of LA/Long Beach
- Restore critical conveyance infrastructure at Cajon Pass for natural gas, power and communications is functional.
- Restore major water conveyance structures including the Arizona Aqueduct and the California Aqueduct supplying water to major water treatment facilities in the incident area.
- Repair/Restore temporary and repaired power generation infrastructure which enables communications, water and fuel distribution, sanitation, and increased public messaging

Questions

Pre Scripted Mission Assignment Bundle #1 PART C

Regional Activation (RRCC/JFO) (FOS) ($4,200,000)

1. **Statement of Work**: Activate the USACE to perform functions of Emergency Support Function (ESF) #3 at the direction and coordination of FEMA. This activation may include support to FEMA Region IX RRCC, IOF/JFO, Incident Management Support Teams (IMAT), ESF #5- Emergency Management, and other teams. This activation also may include contract audit support to ensure costs incurred under USACE MA meet all Stafford Act and regulatory requirements, at the direction and coordination of FEMA. ESF #3 Team Leader and site-specific support staff may be used, including Prime Power and administrative and management support, and/or other mission Subject Matter Experts (SME), some of which may be operating at the Recovery Field Office (RFO), if operational. ESF #3 Support Agency representatives may be activated to serve as liaisons to the ESF #3 Management Team for public works/infrastructure assistance. ,Perform pre and post event modeling and validation. Equipment purchases are not authorized under this Mission Assignment. MA task orders will be issued for specific personnel requirements, location(s), dates, and duration of assignment(s).

2. **Initial Task Order**:
   a. Deploy approximately 20 personnel to include some combination of Team Leaders, Assistant Team Leaders, Subject Matter Experts, and Public Affairs supporting RRCC, IMAT/IOF/JFO, and RFO/AFO. ($900,000)
   b. Initial RFO/AFO staffing and site-specific administrative/ management support at the RFO and other locations varying based on the magnitude and duration of the response and recovery operations. Initial task order estimates are for one RFO and four AFOs aligning with priority FEMA divisions. Estimated startup and 30 days of staffing costs used for calculations of this task order $1,000,000 for RFO and $ $500,000 per AFO, totaling $3,000,000. ($3,000,000)
   c. Agency Activation to support ESF #3 supporting agency representation and support, if required, is estimated to be $300K. This support deploys ~eight (8) personnel for ~30 days and includes overtime, supplies, travel, and per diem. ($300,000)

Regional Activation Breakdown

Regional Activation			
Un-appropriated = Regular + OT 1 Person 12 hrs/day X7 days	**Per 12 Hour Shift**	**Daily Cost @ 20 per day**	**Total Cost (30 days)**
Regular Time (40 hrs X $59.89)	$480	$9,600	$288,000
Overtime (44 hrs X $59.89)	$377	$7,540	$226,200
Benefits @ 39% per CBO	$187	$3,744	$112,320
Lodging + M&IE	$300	$6,000	$180,000
Air fare	$115	$16,000	$16,000
Miscellaneous Expenses	$25	$500	$15,000
Rental Car @ $35/day	$35	$700	$21,000
Parking at @ $25/day	$25	$500	$15,000
Gas	$6	$120	$3,600
Agency Activation			$300,000
Initial overhead staffing RFO (1)/AFO (4)			$3,000,000

Division Operational Phases

Phase/EOC Activation Level	Time-line (Hours)	Goal
Normal Operations (Level IV)		Preparation Early Impact Prediction
I – Activation (Level III)	Pre – E-72	Activate Command, Control (C2)
IIa – Deployment (Level II/Level I)	E-72 - E-48	Activate and Deploy Response Teams & Resources
IIb – Deployment (Level I)	E-48 – Event	Deploy Response Teams Forward
NO NOTICE EVENT	**Combine Phase 1, 2a, and 2b activities**	**1. Activate Command, Control (C2)** **2. Activate and Deploy Response Teams & Resources** **3. Deploy Response Teams Forward**
III – Execution (Level I)	Event– E+12	Rapid Needs Assessment
IV – Recovery (Level / II)	After E+12	Swift Provision of Life Sustaining Goods and Services
V – Closeout		

Base

Sister-District Relationships

- Los Angeles District will be impacted. The 910 Wilshire Building is expected to be severely damaged.

- SPL Alternate COOP site is Project Office in Arizona

- Sacramento District is the lead supporting district for a SoCal EQ. SPK will coordinate ESF #3 response/ execution on behalf of SPL

- Upon reconstitution SPL will reclaim active missions and mange mission execution to completion

- SPL will lead ISF #5 long term recovery efforts

Lead District Operational Phases and Key Actions

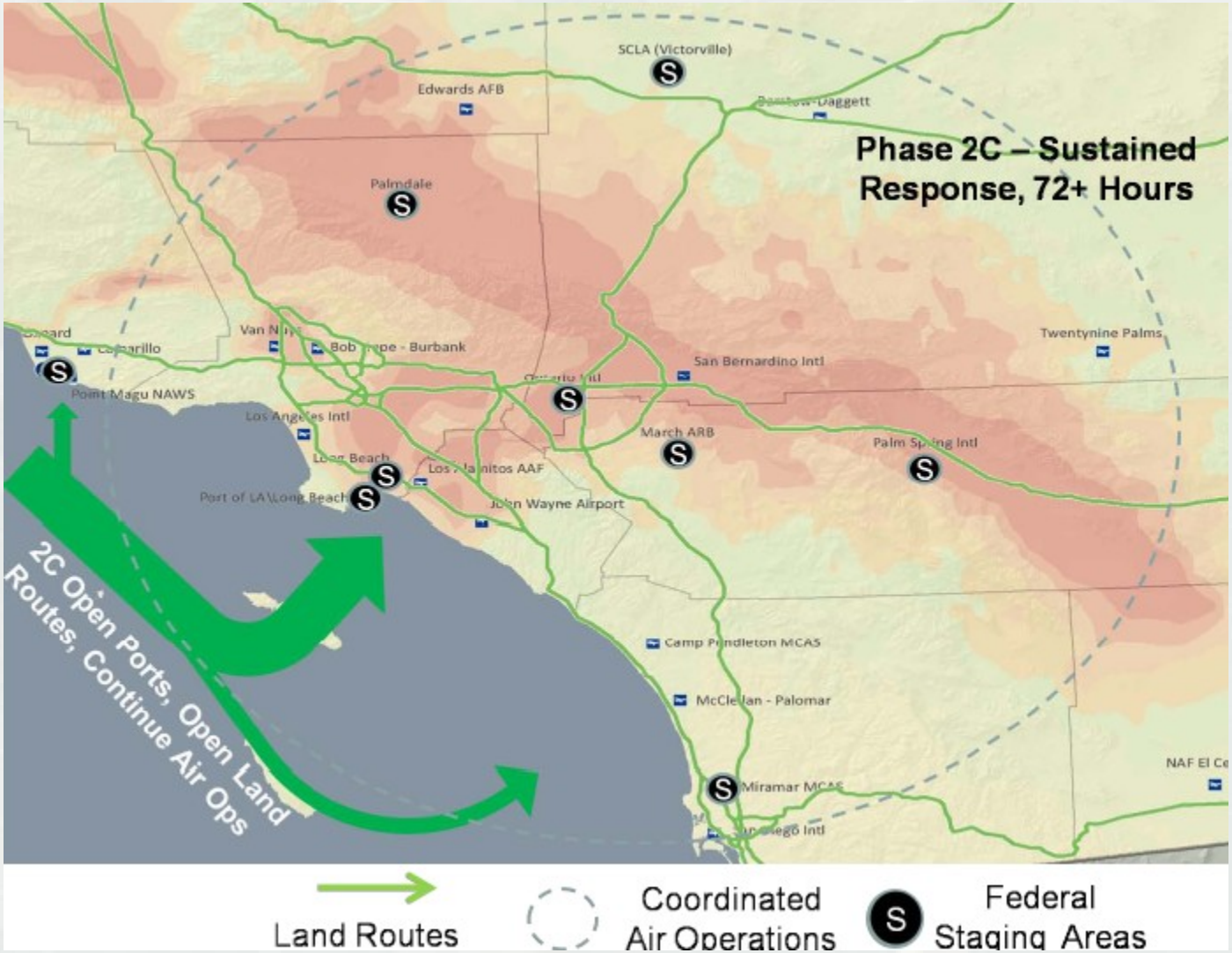
Phase/EOC Activation Level	Time-line (hours)	Goal	Key Decisions
Normal Operations (Level IV)	> E-168-E-120	Preparation Early Impact Prediction	
I – Activation (Level III)	E-120 – E-72	Activate C2	Request prediction models
IIa – Deployment (Level II)	E-120 – E-48	Activate and Deploy Response Teams & Resources	
IIb – Deployment (Level II/Level I)	E-48 – Event	Deploy Response Teams Forward	
NO NOTICE EVENT	Combine Phase 1, 2a, and 2b activities	1. Activate Command, Control (C2) 2. Activate and Deploy Response Teams & Resources 3. Deploy Response Teams Forward	1. Request Code 210 funding 1. Activate Staff and EOCs 1. Establish Battle Rhythm 1. Notify personnel who will be tasked from other districts 1. Initial SITREP 2. Request Support Personnel, as required 2. Reserve Lodging/Vehicles for TDY Support Personnel 2. Secure Vessels and Projects 2. Begin Execution of bundled PSMA 3. In-process Initial Response Cadre 3. ISB Established and Staffed
III – Execution (Level I)	Event – E+12	Rapid Needs Assessment	Deploy PDA teams Over-fly AO (Commander & designated personnel) Contact Customers
IV – Recovery (Level I/Level II)	After E+12	Swift Provision of Life Sustaining Goods and Services	Validate State's Response Needs (Water/Power/IA)
V – Closeout			Physical and fiscal completion of all missions

Base

ESF #3 Teams and Cadre

	SPDHQ	SPA	SPK	SPL	SPN
ESF 3 Team Leader Cadre	2		1		
ESF 3 Assistant Team Leader Cadre	1				1
ESF 3 Local Government Liaison		1	3		
LEAD: Urban Search and Rescue Structures Specialist Cadre	1		6	3	
LEAD: Infrastructure Assessment PRT			1		
Combined Commodities PRT					1
Contingency Support Team PRT (Regional)	1				
Debris Removal PRT			1		
Emergency Power PRT		1			
Temporary Housing PRT				1	
DTOS PRT & ECCV			3	1	
ESF 15 External Affairs Cadre	1	1	2	4	
Remote Sensing Cadre			3		

Annex A


Phase 2C – Sustained Response, 72+ Hours
SCLA (Victorville)
Edwards AFB
Palmdale
Twentynine Palms
San Bernardino Intl
March ARB
Point Mugu NAWS
Los Angeles Intl
Long Beach
Port of LA\Long Beach
John Wayne Airport
Camp Pendleton MCAS
McClellan - Palomar
Miramar MCAS
2C Open Ports, Open Land Routes, Continue Air Ops
Land Routes
Coordinated Air Operations
Federal Staging Areas

California Capability

- California has 58 counties (aka Operational Areas), each with EOC and field response capability

- After an incident

CalOES Activates the SC
(Sacramento) and REOC
and FEMA activates the
NRCC & RRCC (Oakland)

- Nearly 400 miles from

CalOES, Sacramento &
Los Angeles
Wash, DC-Charlotte NC